

MAY 1946 FLOOD IN SUSQUEHANNA RIVER BASIN

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The flood of May 1946 in the upper Susquehanna River Basin followed an unusually persistent rainy period that began in the early part of the month after the driest April in 58 years of record. Stages were the highest of record on the Pine, Lycoming, and Loyalsock Creeks (tributaries of the West Branch of the Susquehanna River), the Chemung and Tioga Rivers, and on the North Branch of the Susquehanna River from the mouth of the Chemung to a point just above Wilkes-Barre, Pa. Several lives were lost as a result of the flood, many persons were made homeless, and considerable property damage occurred.

Persistent heavy showers from May 5-22 over the upper Susquehanna River Basin gradually brought soil moisture and ground water conditions to a point favorable for heavy run-off. However, it was the heavy precipitation that began after noon of the 26th and continued for 30 hours or more, reaching cloudburst proportions at times, that caused the streams to rise above bank levels. Total rainfall from May 26-29 ranged from 4 to more than 7 inches at several stations in southern New York and northern Pennsylvania. Table I shows a tabulation of the rainfall at several stations in the basin during the period of the flood-producing rains.

Long-time record stages were exceeded at Towanda, Pa., on the Susquehanna; at Cedar Run, Pa., on Pine Creek; at Corning and Chemung, N. Y., on the Chemung; and at Erwins, N. Y., on Tioga River. At Elmira, N. Y., the peak stage of the Chemung River at Lake Street bridge was 1.7 feet above the previous maximum stage of record established in 1889. Table II gives a tabulation of flood stages and a comparison of the crests reached in this flood with the heights reached in previous floods.

Along the North Branch of the Susquehanna above the mouth of the Chemung, flood crests were well below record heights. Below, at Towanda, Pa., however, the crest of 25.08 feet exceeded the flood crest of March 1936, by 0.05 foot. The crest at Wilkes-Barre, Pa., was about a foot below that of the March 1936 flood. Rainfall was lighter south of the West Branch of the Susquehanna, and the flood crest was reduced considerably after it passed the mouth of the West Branch. The stages in the Juniata River remained generally well below flood, the river cresting at Newport, Pa., at 15.6 feet on May 28, compared to a crest of 34.2 feet in March 1936. At Harrisburg, the crest in the Susquehanna, 21.8 feet, was 8.5 feet below that of the 1936 flood.

Property damage in the flood amounted to millions of dollars. Soil erosion was exceedingly heavy, and numerous slides and washouts occurred in Bradford, Lycoming, and Tioga Counties in Pennsylvania, and in Chemung and portions of Steuben County in New York. At Lawrenceville, Pa., along the Tioga River, every home in the village was flooded. Practically all of the business section of Elmira, N. Y., and much of the residential area, was flooded by the Chemung River. Business and residential areas flooded comprised about 40 percent of the city's area. The water in the main business district rose to from 4 to 7 feet in depth. At Wilkes-

Barre, Pa., where the flood was only a foot below the disastrous flood of 1936, the city escaped with comparatively little damage, owing to the erection of flood protective works since 1936. At Corning, N. Y., the flood was only 6 inches below the top of the flood protection dikes. At Harrisburg, Pa., and downstream, only light damage occurred.

TABLE I.—Daily precipitation May 26-29, 1946

[Measured at 7 a. m.]

Station	May 26	May 27	May 28	May 29	Total
Covington, Pa.	0.10	1.47	3.44	0.10	5.11
Wellsboro, Pa.	.35	1.38	3.89	.10	5.72
Corning, N. Y.	.50	1.39	2.11	.13	4.13
Binghamton, N. Y.	.54	1.00	1.95	.31	3.80
Pleasant Mount, Pa.	.53	1.42	2.18	.29	4.42
Susquehanna, Pa.	.49	.71	1.64	.22	3.06
Towanda, Pa.	.51	1.03	3.73	.17	5.49
Tunkhannock, Pa.	.40	.86	2.90	.40	4.56
Dushore, Pa.	.69	.97	3.05	.25	4.96
Wilkes-Barre, Pa.	.91	.86	1.35	.31	3.43
Danville, Pa.	.97	.85	1.50	.22	3.54
Clearfield, Pa.	.51	2.02	1.22	.10	3.85
Karlsruhe, Pa.	.81	2.10	1.29	.10	4.30
Emporium, Pa.	.79	1.46	2.49	.07	4.81
Medix Run, Pa.	.90	1.49	1.78	.04	4.21
Driftwood, Pa.	.66	1.17	1.77	.03	3.53
Renova, Pa.	.38	2.16	4.70	.10	7.34
Carter Camp, Pa.	.62	1.01	3.30	.05	4.88
Lock Haven, Pa.	1.03	1.04	2.80	.10	4.97
Cedar Run, Pa.	.87	1.79	3.35	.03	6.04
English Center, Pa.	.52	1.06	4.33	.14	6.05
State College, Pa.	1.30	1.19	1.13	1.15	4.77
Bald Eagle, Pa.	.48	1.12	1.43	.12	3.15
Newport, Pa.	1.41	.79	1.22	.16	3.58
Laurelton, Pa.	.16	1.03	1.95	.20	3.34
Sunbury, Pa.	1.44	1.53	3.22	.22	6.41
Good Springs, Pa.	1.46	1.22	1.40	.09	4.17
Vestal, N. Y.	.55	1.00	1.63	.26	3.44
Bainbridge, N. Y.	.42	.90	1.65	.12	3.09
Oneonta, N. Y.	.34	1.19	1.47	.15	3.15
Rockdale, N. Y.	.36	.94	1.70	.20	3.20
Greene, N. Y.	.47	.92	1.72	.20	3.31
Whitney Point, N. Y.	.29	1.16	1.85	.26	3.56
Spencer, N. Y.	.48	1.54	2.02	.18	4.22
Chemung, N. Y.	.24	1.36	2.47	.19	4.26
Bradford, N. Y.	.38	1.28	1.93	0	3.59
Alfred, N. Y.	.26	.95	3.53	0	4.74
Addison, N. Y.	.35	1.23	3.15	1.37	6.10

TABLE II.—Table of flood stages

River and station	Flood stage	May 1946				Previous to 1946	
		From—	To—	Crest	Date	Crest	Date
Tioughnioga:							
Whitney Point, N. Y.	12	27	28	12.7	28	16.6	1942
Chemung:							
Greene, N. Y.	8	28	28	8.6	28	14.3	1942
Binghamton, N. Y.	16	28	29	17.08	28	26.96	1936
Chemung:							
Corning, N. Y.	16	27	28	24.4	28	20.15	1935
Chemung, N. Y.	12	27	29	23.97	28	19.6	1940
Pine Creek:							
Cedar Run, Pa.	12	27	28	14.37	28	11.39	1936
West Branch:							
Renova, Pa.	16	27	28	20.15	28	29.39	1936
Lock Haven, Pa.	21	28	29	26.85	28	32.3	1936
Williamsport, Pa.	20	27	29	29.63	28	33.57	1936
Lewisburg, Pa.	18	28	30	29.0	29	32.13	1936
Juniata:							
Newport, Pa.	22	-----	-----	15.6	28	34.24	1936
Susquehanna:							
Oneonta, N. Y.	12	27	31	16.25	29	20.5	1936
Bainbridge, N. Y.	12	28	29	14.1	28	22.1	1914
Vestal, N. Y.	14	27	30	19.96	28	30.5	1936
Towanda, Pa.	16	27	29	25.08	29	25.03	1936
Wilkes-Barre, Pa.	22	28	30	32.01	29	33.07	1936
Danville, Pa.	20	28	31	26.03	29	28.0	1936
Sunbury, Pa.	16	28	30	22.99	29	26.85	1936
Harrisburg, Pa.	17	28	30	21.80	29	30.3	1936